DOCUMENT RESUME

ED 091 869 80 EA 006 241

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TITLE Indicators and Statewide Assessment.
INSTITUTION Colorado State Dept. of Education, Denver. Cooperative Accountability Project.; Oregon State Dept. of Education, Salem. Div. of Planning, Development, and Evaluation.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.
PUB DATE Mar 74
NOTE 43p.
AVAILABLE FROM State Educational Accountability Repository (SEAR), Wisconsin Department of Public Instruction, 126 Langdon Street, Madison, Wisconsin 53702

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS *Affective Objectives; *Cognitive Objectives; Cultural Factors; *Educational Assessment; Educational Objectives; Low Achievement Factors; *Performance Factors; *Social Factors; State Standards
IDENTIFIERS Elementary Secondary Education Act Title V; ESEA Title V; *Indicators; Oregon

ABSTRACT

This report is designed to share the experiences of Oregon's Department of Education, thus far, with both the conceptual and actual use of indicators in assessing progress toward State level goals and objectives. The first chapter outlines the history of the study and briefly discusses the concept of indicators as used in the report. The report then presents Oregon's definitions of indicators and suggests criteria to be used in selecting indicators. The next discussion covers two ways in which Oregon will use indicators in statewide assessment. It also suggests modifications that other States might wish to make, and some difficulties that may be encountered. A subsequent chapter outlines the procedures used by Oregon to identify and inventory sources of indicators, and a final chapter reports on the uses being made of indicators by other State departments of education and also mentions some of the noneducational settings in which the concept has been used. Appendixes include a list of indicators actually identified for future use in Oregon, sample forms, a list of agencies contacted as potential sources of statistical data from which indicators could be developed, and selected references. (Author)

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INDICATORS AND STATEWIDE ASSESSMENT

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Denver, Colorado
March, 1974

EA 006 241

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FOREWORD

Indicators and Statewide Assessment, prepared under the able direction of the Oregon State Department of Education, is one in a series of publications produced by the Cooperative Accountability Project (CAP) since the initiation of the Project in April, 1972.

It is increasingly apparent that a major concern in education today is that of specifying realistic student outcomes in terms the education profession will accept and the layman or taxpayer can understand. The widespread use of performance objectives and criterion-referenced measurement has necessitated the development of realistic indicators for different types of pupils.

Indicators and Statewide Assessment will have wide applicability for educational accountability. It is anticipated the use of this type of information can improve the usefulness of student achievement data, making the results both more meaningful and more acceptable to all concerned.

The use of indicators of performance as developed in Oregon can be coordinated with validated expectancies or predictors to give state education agencies and school districts a basis for formulating realistic expectations for the various attendance units in their jurisdiction.

Because much of the information related to the use of indicators currently is being collected and used in a variety of ways by state agencies and school districts, as found in the state of Oregon, intensive effort by states to make realistic use of the data can be accomplished with a minimum expenditure of funds.

All CAP publications have been based on careful research and analysis by well-qualified personnel in the field of education. A wide variety of subjects has been covered ranging from reviews of accountability legislation by the states to techniques for keeping the public informed about accountability. Together these varied publications comprise a valuable reference "library" which will assist both professionals and laymen in the development and implementation of comprehensive accountability programs.

A listing of CAP publications may be obtained by writing the Cooperative Accountability Project, Colorado Department of Education, 1362 Lincoln Street, Denver, Colorado, 80203, or the State Educational Accountability Repository (SEAR), Wisconsin Department of Public Instruction, 126 Langdon Street, Madison, Wisconsin, 53702. Revisions of earlier items and new publications are continually in preparation and will be added to the CAP publications list periodically.

Arthur R. Olson, Director
Cooperative Accountability Project

PREFACE

The potential use of indicators as an aspect of statewide assessment is of growing interest to state departments of education throughout the country. Discussions of the application of indicators as a method of assessment is not limited to education. As noted elsewhere in this report, the technique has long been used by economists and more recently has been the subject of large-scale research and experimentation by social scientists concerned with the development of "social indicators."

This report is designed to share experiences of Oregon's Department of Education, thus far, with both the conceptual and actual use of indicators in assessing progress toward state-level goals and objectives.

The document is organized into six parts.

Chapter I outlines the history of the study and briefly discusses the concept of indicators as used in this report.

Chapter II presents Oregon's definitions of indicators and suggests criteria to be used in selecting indicators.

Chapter III discusses two ways in which Oregon will use indicators in statewide assessment. It also suggests modifications which other states might wish to make and some difficulties which may be encountered.

Chapter IV outlines the procedures used by Oregon to identify and inventory sources of indicators.

Chapter V reports on the uses being made of indicators by other state departments of education and also mentions some of the noneducational settings where the concept has been used.

Appendixes include a list of indicators actually identified for future use in Oregon, sample forms, a list of agencies contacted as potential sources of statistical data from which indicators could be developed, and selected references.

The Oregon State Department of Education's Planning, Development and Evaluation Division received significant help from numerous state and local government agencies, school districts, and universities during the design and execution of this project. Special recognition should be given to the department's Career Education staff for its assistance in helping to compile possible indicators; the Marion County Intermediate Education District, which provided both management and research support to the study; and the University of Oregon's College of Education for its contribution to a model for statewide assessment.

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Chapter I

INTRODUCTION

The Antecedents

Since the early 1970s, the Oregon State Department of Education has been facing a series of challenges not unlike those being encountered elsewhere in the country. They can be summarized as follows:

Establishing the scope of education's responsibility. In 1971, the Oregon legislature began consideration of several bills concerned with establishing responsibility for desired outcomes of elementary and secondary education. Testimony was heard throughout the state from groups representing two major viewpoints. One group insisted that the educational system's only responsibility is to help students acquire desirable skills and knowledge in basic subject matter. Another group argued that, in addition to this, the educational system should be held responsible for how well students perform after graduation in such crucial roles as wage earner, citizen, consumer. There also was strong support for the idea that schools should be held accountable for the extent to which students exhibit socially desirable attitudes.

Evaluating schools on the basis of ultimate impact. Although the legislature took no action in 1971, a growing segment of the population seems to be looking for ways to evaluate schools in terms of their impact on social conditions, as well as in terms of student academic achievement.

Making needed program changes to achieve socially desirable outcomes. A series of interviews conducted for the department by the University of Oregon revealed that most people are willing to admit that schools do not have sole responsibility for such things as student attitudes and performance in adult roles, but they do believe the educational system should be concerned with some type of impact analysis that would indicate the nature of educational changes needed when it becomes evident that long-term progress toward societal goals is unsatisfactory.

Revising goals. The State Board of Education is in the process of revising its statewide goals for elementary and secondary education to focus on a new concept: preparing students for "life roles" as learners, producers, consumers, citizens, individuals, and family members. Because goals cast in this model do not speak directly to the skills or knowledge acquired through study in specific subject areas or disciplines, new evaluation strategies are needed.

Assessing progress towards goals. The board is committed to building a method for assessing progress toward these "life role" goals for the purpose of public and legislative reporting. It is obvious that the board cannot rely solely on student performance assessment information gained through the traditional tests of reading, mathematics, and other basic subject matter.

Revising priority needs to target resources. The board also is in the process of revising its statements of priority needs and proposed accomplishments. These statements will serve as short-term objectives for the targeting of department resources over a two- to four-year period, but they also speak to the outcomes that such efforts are designed to influence or achieve.

Developing an evaluation program. The department needs to develop an evaluation program for these proposed accomplishments which takes into account the assessment of student performance as well as an analysis of other descriptors, such as the degree to which schools have installed certain instructional and management processes, the increase in student enrollment in desired programs, and so forth.[1]

Like most states, Oregon's Department of Education also has been faced with the problem of limited financial and personnel resources. Knowing that the creation of adequate evaluation and student assessment programs for the areas outlined above would require long-term development, the department has begun searching for methods of meeting the need for immediate information on progress towards the revised goals and priority needs. This search is based on the assumption that the department should be concerned with information which speaks to the ultimate impact of the educational system as well as information providing more direct evidence of the outcomes of local and state efforts.

Several aspects of the search have been completed. One of the first steps was an inventory of the program evaluation and student assessment models being used throughout the country. A second step was the design of a total state-level planning strategy which benefited from input from locally available resources as well as one of the regional laboratories. A third step was a review of educational and social science literature to identify techniques that used statistical data already extant in state or national agencies as a method of impact analysis.

The Concept

From these efforts, consensus was reached on two points:

The department would use the word "assessment" to describe a comprehensive effort to gather information on the status of progress toward desired goals and objectives for the purpose of state-level decision making. Within this context, the assessment of student performance became only one of several potential sources of information.

The department would focus on the technique of using "indicators" as a method of collecting and reporting the assessment information.

For the purposes of this study, the term "indicator" is being defined as *a descriptor, in quantifiable terms, of the status at a specified point in time of a significant condition or variable which provides evidence useful for an analysis of progress toward a goal or objective.*

It should be recognized that:

(1) Indicators do not describe the desirability or quality of the progress reported. Such judgments will rest with state-level decision makers and ultimately with the population as a whole.

(2) In order for an indicator to show progress (or lack of progress), it must be stated in such a way that it lends itself to comparison with some earlier period.

(3) There is no provable relationship between the variables described in specific indicators and goals or objectives. For example, we have little proof of direct causal relationship between dollars expended per student and actual student performance. However, decisions are constantly being made on this basis. Therefore, it seems advisable to establish a system for screening indicators to assure that the data used as a basis for decision making is the best available.

Additional qualifications will be discussed in later chapters.

Chapter II

INDICATORS: DEFINITIONS AND SELECTION CRITERIA

"Indicator" is not a new term that needs to be added to the vocabulary of most educators. It has been used for a number of years in the fields of business, economics, and social research. What may be new to educators is the use of the term in association with assessment. Therefore, there is a need to clarify its definition and identify acceptable criteria for its selection and use. Oregon's project has made an effort to do both of these things.

For the purpose of this study, "indicator" is defined as:

> A descriptor, in quantifiable terms, of the status at a specified point in time of a significant condition or variable which provides evidence useful for an analysis of progress toward a goal or objective.

Three important elements appear in the definition:

(1) The expression is quantifiable–data does exist, or can be collected, to show "how much" of the indicator exists.
(2) The condition or variable that is described has, by general agreement, a relationship to the goal with which it is associated.
(3) The measurement is associated with a point in time.

To illustrate, an indicator which contains these three elements is:

> The *number of high school seniors* (1) who did *volunteer work in a community social agency during the* (2) *school year.* (3)

To be of greatest use in assessment, indicators should be:

(1) Related to agreed upon goals.
(2) Derived from reliable and valid data.
(3) Derived from data that will continue to be collected so that comparisons over time may be made.
(4) Derived from data for which the measurement techniques have stability over time.

It is important to recognize the significance of (1) above. A specific set of data, or information, does not become an indicator until its relationship to an educational goal is established.

The criteria for acceptance of an indicator may change depending upon desired use. If it is desirable to have a "one-shot" assessment, criteria (2) and (3) would not be applicable. Indicators used to predict the future rather than report current status may need to meet other criteria. For Oregon's purposes, indicators will be used to report current status and to compare current with past status. They will be classified according to their uses, as follows:

An *input indicator* describes a condition or variable over which the school has some control and which affects the school's ability to achieve an instructional, management, or support goal. Examples are:

- Teacher-pupil ratio
- Characteristics of teachers
- Quantity or quality of facilities or equipment

A *context indicator* describes a condition or variable over which the school has little or no control. It affects the school's ability to achieve an instructional, management, or support goal. Examples are:

- Socioeconomic background of students
- Ability of students
- Availability of economic resources

A *performance indicator* describes a measurable or observable behavior or variable used to determine program effectiveness or efficiency. Data may concern (a) student performance scores, or (b) a program variable such as instructional process or availability of learning experiences. Examples are:

- Student test results
- Observable behavior
- Number of students completing graduation requirements
- Number of courses using individualized instruction
- Number of courses offered
- Number of students who enroll in two- or four-year institutions upon graduation
- Number of learning situations outside of the school that are available to students.

A *societal indicator* describes a measurable aspect of a social condition affected to some degree by education. Examples are:

- Number of arrests for delinquency
- Suicide rate for young adults
- Incidences of drug abuse by young adults
- Employment rate of recent graduates

USES OF INDICATORS WITHIN OREGON

Assessment of Statewide Goals

A recent paper produced for the Cooperative Accountability Project suggests that progress toward the more idealized educational goals (such as "appreciation of democratic society") can be accomplished by "measuring an array of school and community variables which correlate with our conception of a goal."[1] This lends support to the notion that quantified variables, expressed as indicators, can be used as information for analyzing the degree of progress, or lack of progress, toward goals.

In another reference, Nottingham proposes a model for change in which indicators are identified for each educational goal.[2] In Nottingham's model, indicators for the broad goals are statements in behavioral terms. These statements are then translated into behavioral or performance objectives.

The approach under design in Oregon varies slightly from these two concepts.

As noted earlier in this report, the Oregon Board of Education is in the final stages of revising its statewide goals for elementary and secondary education. Once established, these goals are expected to remain in force at least until 1983.

At the present time, the board is considering six goals stated in terms of six life roles with which each

OREGON GOALS FOR ELEMENTARY–SECONDARY EDUCATION*

Responsibility for the growth and development of each Oregon student is shared by the community, the school, the family, and the individual student. The purpose of schooling is to provide, in an organized way, the knowledge and skills the person needs to perform effectively in the essential roles of a free society.

Each school district is primarily responsible for developing intellectual and manual skills and for sharing with parents, churches, and other institutions responsibility for the balance of each person's education.

The goals of education are determined by individual student needs as identified by each school district and its community. To guide the schools in setting district goals, the Oregon Board of Education establishes statewide goals for elementary and secondary education related to six life roles.

Goals for Which Schools Have Primary Responsibility

(1) In preparation for the role of *learner:*

Each individual will master the basic skills of reading, writing, speaking, listening, computation, and problem-solving; will become aware of the ideas and processes of science; and will accept learning as a lifelong endeavor in self-development for work and leisure.

(2) In preparation for the role of *producer:*

Each individual will learn of the world of work, learn to identify personal talents and interests, learn to make appropriate career choices, and develop salable skills.

(3) In preparation for the role of *citizen:*

Each individual will learn of the rights and responsibilities of citizens of the community, state and nation; learn to interact with people of different cultures, races, generations, and life styles; and learn to act responsibly on the streets and highways and toward the environment.

(4) In preparation for the role of *consumer:*

Each individual will acquire the knowledge and develop skills relating to the management of personal resources in order to more successfully provide for personal and family security and meet obligations to self, family, and society.

Goals for Which Schools Share Responsibility with Parents and Communities

(5) In preparation for the role of an *individual:*

Each individual will develop awareness as a self-directed person; acquire the knowledge to achieve and maintain mental and physical health; and develop the capacity to enrich life through association with the arts and humanities.

(6) In preparation for the role of *family member:*

Each individual will learn of the rights and responsibilities of family members and how to strengthen and enjoy family life.

*Adopted for second reading by the Oregon Board of Education on August 8, 1973.

[1] Colorado Department of Education, Cooperative Accountability Project, *Potential Indices of Educational Quality in Colorado*, the Department, Denver, 1972.

[2] Jayen Nottingham, "Commitment to Accountability–A Case Study," *Journal of Secondary Education*, January 1971.

student must be prepared to cope. The board has identified four of these goals as being the "primary responsibility" of schools and has said schools "share responsibility" for the remaining two with parents, churches, and other institutions. Because the content of these proposed goals is a major reason for the anticipated use of indicators in Oregon, they are reprinted in full on the previous page.

While the final version of these statements will not be adopted until January of 1974, the language is not expected to vary substantially.

Concurrent with review of these goals, the department is building a matrix to select either performance or societal indicators which relate to key concepts expressed in each goal. The finished matrix may have a number of indicators for each concept, but for the purposes of illustration, these have been limited to some representative examples in Table I.

Because the new statewide goals are not scheduled for another revision until the early 1980s, the department intends to monitor the selected indicators over a ten-year period and to make annual or biennial reports on the trends established by the indicators.

The primary audiences for such reports will be the Oregon legislature and the general public. However, several strategies also are being considered for meeting with school district personnel to discuss the possible implications of the reports and to analyze changes in state-level policies (such as minimum requirements for graduation) which may be appropriate.

Several assumptions will dictate the final reporting procedures and format chosen:

(1) The department intends to stress the fact that goals, by their very definition, cannot ever be fully achieved. The purpose of the periodic reporting of indicators, therefore, is to see if any progress toward goal achievement is being made and to identify areas of potential strength or weakness in the educational system as a whole.

Table I: Suggested Indicators for Selected Concepts In Proposed State Goals

Goal	Concept	Performance Indicator	Societal Indicator
Producer	Making appropriate career choices	Number of students enrolled in special career awareness or career exploration programs in Oregon.	Population 16-21 not in school, unemployed, and not in the labor force.
		Source: *Annual Summary of Exemplary Projects in Vocational Education,* State Department of Education.	Source: *Annual Report, CAMPS Manpower Data,* Governor's Commission on Manpower.
Consumer	Management of personal resources	Percentage of students tested that are able to demonstrate ability to balance a checkbook.	Number of consumer problems handled by Legal Aid by types: sales contracts, garnishment, and bankruptcy.
		Source: Test item on statewide assessment of student performance in personal finance, State Department of Education.*	Source: *Community Service Project Annual Report,* Community Action Agency, Portland.

*Oregon's plans for statewide assessment of student performance are still in the developmental phase, so indicators of this type are not widely available. At this time, however, certain types of applied performance test items are planned for early implementation, and the actual indicators to be selected from among these will be chosen as soon as the tests are finalized.

At the same time, the department is experimenting with the identification of *input* and *context* indicators for each goal and its related concepts. A decision has not yet been made on whether such indicators actually will be included in the final plans.

(2) The indicators themselves will not be phrased in a way that infers evaluative judgment of the significance of the data reported. If analyses, interpretations, or opinions are included in the reports, these will, of course, be identified as such.

(3) If *input* and *context* indicators are publicly reported, they probably will be used to demonstrate relationships between such indicators and *performance* or *societal* indicators. These relationships may be described as explanatory factors which mitigate for or against progress toward a goal.

(4) The reports will place a heavy emphasis on the fact that the educational system cannot be held solely responsible for trends (desirable or otherwise) evidenced by the *societal* indicators. Not only have the goals themselves been phrased to establish differing levels of accountability for schools, but the separation of *performance* indicators from *societal* indicators also is expected to make this point.

Assessment of State-Level Priority Needs and Proposed Accomplishments

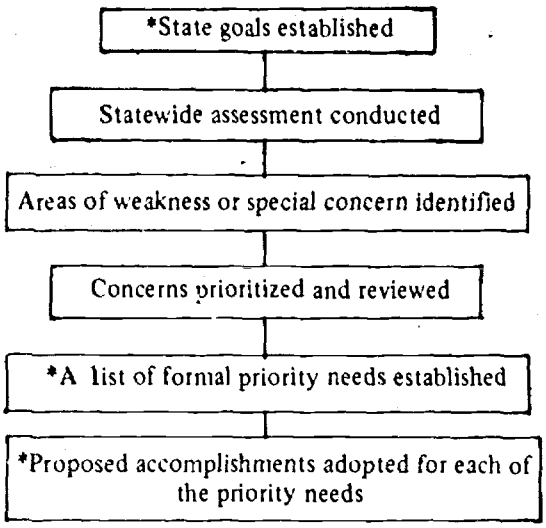
In Oregon, the concept of priority needs is used as a way of identifying special problem areas in elementary and secondary education which should receive attention over a two- to four-year period. In each priority need area, the department has established proposed accomplishments which are used as targets. They will aid in allocation of departmental resources for assisting local school districts to achieve desired capabilities.

Each proposed accomplishment identifies:

(1) The specific effort that will be made by the department (e.g., providing in-service training, developing curriculum materials).
(2) The capability which local districts should acquire as a result of the activity.
(3) The degree to which all or a specified number of districts should be able to demonstrate the desired capability.
(4) A time limit.
(5) What the impact on students should be when district personnel acquire the specified capability.

Examples of proposed accomplishments can be found in Table II on page 7.

The sequence of events which leads to the identification of priority needs and proposed accomplishments follows:



While a variety of audiences and influences contribute to decisions made at each step of this model, only those steps marked with an asterisk require formal hearings and legal adoption by the Oregon Board of Education. Priority needs and proposed accomplishments are identified for both instructional and managerial areas.

This year, the statement of priority needs and proposed accomplishments also is undergoing revision in Oregon. It is scheduled for adoption by the board in December of 1973.

At the present time, the department is concentrating on the identification of *performance* indicators for each of the proposed accomplishments. These include:

(1) Indicators of department progress toward carrying out specified activities.

(2) Indicators of the degree to which proposed accomplishments and projected activities produce a desired affect on students and schools.

The department indicators will be drawn primarily from the periodic progress reports filed by each department program (a process required under state budgetary regulations) and will be used for internal decision making by the agency's managers. Details on the use of indicators in this context will be available in the final report on Oregon's participation in a U.S. Office of Education-financed experiment with Management Information Systems.[3]

[3] Alabama State Department of Education, Administering Agency, "Three-state Management Information Systems Development Project," funded by Title V, Section 505, Elementary and Secondary Education Act of 1965 (P.L. 89-10, as amended).

Table II: Suggested Indicators for Two Priority Needs and Proposed Accomplishments*

Priority Need	Proposed Accomplishment	Performance Indicator
Increase Opportunities for the Development of Reading Skills	Develop and implement by July 1, 1977, a statewide plan to insure that all local school districts will organize reading programs so that all students will have the opportunity for instruction necessary to cope with their environment.	Percentage of students tested demonstrating specified "survival level" reading skills at the fourth-grade level. Source: Test item on Statewide Assessment of Student Performance, State Department of Education
Emphasize the Fourth "R," Responsibility	Validate and disseminate exemplary projects which have organized out-of-school and school-related programs to insure that 40 percent of the districts shall have students participating in civic affairs, service organizations, social work, or local government by 1977.	Number of districts sponsoring student occupational service clubs. Source: *Annual Report on Career Education*, State Department of Education

*The board approved a revised list of priority needs for second reading at its meeting of August 8, 1973. Proposed accomplishments for each need are in the process of being drafted and reviewed by department staff. The examples cited here are not in final form.

Examples of the types of performance indicators that could be used to assess the impact of proposed accomplishments on students and schools are provided by Table II.

A department task force has identified approximately 45 proposed accomplishments for the ten areas of priority need now under review. Because of the number of items involved, a decision is still pending on whether *input, context,* and *societal* indicators also will be identified for each accomplishment.

Information concerning statewide progress toward accomplishments in priority need areas will be reported every two years in the department's formal *Biennial Report.* This document is required by statute and is submitted at the opening of each legislative session. A mini-report, citing highlights of the original document, is prepared for general distribution throughout the state.

Some Evidence of Acceptance

The *Biennial Report* issued in early 1972 was the first attempt made by the department to use indicators as a way of assessing progress toward the proposed accomplishments established in 1969. Although the department's data bank of indicators was still in its early stages (and the series of classifications described here had not yet been developed), the report was received with considerable enthusiasm by many legislators. This reception indicates that public policymakers will be appreciative of agency efforts to provide factual data on which evaluative judgments can be based. The desirability of having such information was a major factor in the legislature's decision to provide state-level revenue to help launch the first phase of a statewide assessment of student performance.

Some Possible Variations and Dangers

Oregon's educational leaders recognize that much remains to be done before the concept of indicators is fully defined and their use established as a regular part of the state's assessment process. Some additional observations may be valuable to other states interested in exploring this approach.

The use of indicators increases the need for preparing well-written state-level objectives. Not only does this call for the investment of additional staff and time, it also increases the degree to which the department's efforts can be judged by others. In view of this, it is extremely important that an agency carefully distinguish the degree of responsibility it can realistically and politically assume when establishing proposed outcomes. For example, if a state department or school district infers that it can be held primarily responsible for such factors as the incidence of veneral disease in school-age youth, or the unemployment rate of young adults, it is facing serious trouble. This is one reason why Oregon has chosen to make a clear distinction between the *performance* and *societal* indicator.

Departments of education should caution their spokesmen about the dangers of making unsubstantiated

claims for the significance of a trend established through indicators. A decline in the number of students graduating from high school may not necessarily be a calamity. Several factors, including a decline in twelfth-grade enrollment or the availability of alternative educational modes, may be the real reasons for such a decline. Departments may wish to consider designing analytical studies to probe, in depth, the reasons behind certain significant trends.

State departments will want to assure that the statistical basis for an indicator remains valid over time. For example, an increase in the number of students failing entrance examinations to college may be significant only if the same percentage of eligible students continue to take the exams and if these students come from the same type of socioeconomic background. A change in any of these variables will throw doubt on the validity of such an indicator when it is compared against earlier reports.

The use of indicators is extremely flexible. It can be modified in a number of ways to meet the unique evaluative needs of a particular state. Colorado, for example, has been experimenting with the idea of "indicators of quality."[4] The primary difference between Colorado and Oregon strategies is that Colorado prefers to identify an acceptable performance level in each indicator. Oregon, on the other hand, establishes its desired performance level in the language of the proposed accomplishment. In addition, indicators may provide a new way to report statewide student testing data to the public.

For public reports, states with limited assessment budgets may choose to analyze and report results of only those test items that indicate student progress toward acquiring competencies in special skill areas such as reading and computation. This approach has been used by the National Assessment of Education Project in its press releases and in publications aimed at a general audience.

States can classify indicators in several ways. Such classification really only becomes meaningful when the indicator is assigned to a specific goal or objective. For example, the percentage of juvenile arrests for drug abuse may be classified as an input indicator in the context of a goal which speaks to the "maintenance of a "healthy body." But it may become a performance indicator for an objective concerned with the establishment of effective drug education programs.

Indicators can be used by local districts for purposes of student performance measurement and program evaluation (particularly districts with limited budgets). For example, Oregon's new high school graduation standards require districts to identify the minimum competencies young people must have when they leave high school in order to assume their "life roles" with confidence and some assurance of performing successfully. Not only must districts identify minimum competencies and include them in their curricula as program and course goals, they also are required to establish performance indicators (such as "role playing" behaviors) they will accept as evidence that a student has achieved these competencies.

[4]Colorado Department of Education, *Potential Indices*.

Chapter IV

THE SEARCH FOR INDICATORS IN OREGON

Although the Oregon State Department of Education has gathered and published information about the organizational, financial, and operational aspects of the public school system for many years, in 1972 a search was initiated for sources of other types of data that could be used as indicators of educational progress. The first effort was to locate and classify all data collected by programs within the department. The second effort was a preliminary survey of other agencies to obtain data that could be used in the 1971-73 *Biennial Report* to indicate progress toward accomplishing board priorities.

Late in 1972, the department set out to identify all data (collected within the state by other state agencies) that might be used as *societal* indicators of educational outcomes. This search produced the data and source information found in Appendix 1. The search also produced some practical experiences in conducting a search and writing indicator statements. A description of these experiences should be helpful to those who want to use these cataloged indicators as a starting point for determining the existence of these and other data sources in their own locales.

Procedures for Search of State Agencies

Step 1: A Feasibility Study

The services of a university staff member were contracted for a short-term (two-month) study to determine the feasibility of surveying state agencies for indicator materials. This study produced few indicators, but it did produce guidelines for a more extensive search to be conducted by State Department of Education staff. A survey was conducted by one person who visited each agency and asked essentially the same question: "What data, statistics, reports, or surveys does your agency or office collect, compile, or otherwise organize which may have relevance for describing or assessing education at the state, county, or district level in Oregon or for describing pupil characteristics or post-school behaviors?" Though the question and subsequent interviewer elaborations were intended to assure agency personnel that the survey was not looking for data on student academic achievement, the most common response was, "We don't have data that could be used for assessing education." It became obvious that, in order to obtain the information needed, it would be necessary to formulate more probing questions and attempt to identify the person in each agency most likely to know about data available.

Step 2: Analysis of the Feasibility Study

From the feasibility study, some operational needs were identified for a major indicator search:

(1) The need to be specific in the definition of an indicator: to state, in precise terms, the types of information sought.

(2) The need to be inclusive: to search within a wide range of agencies and not restrict the search to sources of data that *appeared* to have a reference to children or education; to search for publications that may not make exclusive use of original data but do report data in comparative ways useful to educators.

(3) The need to make an intensive search including personal visits to agencies with the intent of bringing back copies of agency publications and reports.

(4) The need to make a concerted effort. With a large number of agency visits to be made, a significant number of department staff needed to be involved in the search.

Step 3: Developing Specific Concepts

In order to assure specificity, the Planning, Development and Evaluation Division studied several current developments in usage of indicators and prepared the operational concepts and definitions. These were set forth in Chapter II and are summarized again here:

(1) Indicators are *not* statements of measurement against a standard. Rather, indicators describe a fact at one point in time. "Sources of Data for Indicators," page 17, includes information about the source of each indicator, how often it is reported, and the manner in which it is reported. No data is used that is not collected over a period of time.

(2) Four types of indicators are defined in terms of use. *Input* and *context* indicators include the type of data that describes the "raw materials" of the educational program: money, teachers, community interest, student abilities, and socioeconomic backgrounds. *Performance* indicators include the type of data that describes the rather immediate results of an educational

program. *Societal* indicators include the type of data that measures the long-term results of an educational program that has had an impact upon social conditions.

Step 4: Developing a Survey Organization

With a better understanding of the specific kinds of information needed, an in-depth search of state agencies was organized. Fourteen state agencies were selected for the survey because of the probability that these agencies collected pertinent data. (Eventually, this number expanded to 47 divisions of 17 state agencies.) Fourteen education department staff members interviewed representatives of these state agencies. Whenever possible, interviewers were selected on the basis of prior dealings with the people to be interviewed.

In addition to the 14 interviewers, two staff members screened agency data and wrote indicator statements.

Step 5: Constructing Survey Forms

Two forms were devised, one for use by agency interviewers (Form A) and one for use by indicator writers (Form B).[5]

Form A is useful only when agency publications are not collected. The primary objective is to determine whether specific data is collected periodically and thus is subject to comparison over time.

Form B (after several minor revisions) proved a useful tool for recording the indicator statement, its source, and other necessary information. This information could be more precise if the length of time during which data has been collected in the same manner were included. The agency designation should be detailed enough to allow anyone to get to the same source of the data mentioned in the indicator statement.

Step 6: Briefing Sessions for Interviewers

Briefing sessions were held for the interviewing staff to introduce the project and to assure a similarity in interview procedures. The briefing sessions covered the following topics:

(1) Oregon's commitment to the Cooperative Accountability Project study.

(2) Definitions and types of indicators.

(3) The department's commitment to developing and using indicators as a part of state assessment.

(4) Procedures for contacting agencies: what to ask and what to bring away.

(5) Professional recommendations for the selection of data as possible indicators.

(6) A timetable.

Staff interviewers were especially cautioned *against* asking agency contact persons whether or not they had data that could be used as educational indicators. It was suggested that references to "educational indicators" be avoided and that emphasis be placed on a search for regularly collected data that may be used to describe factors such as social problems, the community, the economy, or the environment.

Interviewers were encouraged to seek the expertise of several people within an agency and to probe for data that might be *collected* by the agency but not reported in the usual agency publications.

Briefing sessions lasted between one and two hours, and at least half of the time was spent on questions and discussion. Interviewers were asked to complete agency visits and return agency publications and reports within two weeks. They were asked to scan each publication and flag data that appeared useful.

Step 7: Agency Interviews

A majority of initial interviews were held in the first week. However, most interviews uncovered other data sources (and other personnel to be visited) in the same or another agency.

Initial contact, in most cases, was made with an acquaintance in the agency, regardless of position. These interviews lasted less than an hour, but it was not unusual to find one interview leading to several more.

Step 8: Writing Indicator Statements

A great deal of material was screened. One-of-a-kind surveys were discarded, but considerable time was spent tracing data used in one publication and referenced to another source by an inaccurate or incomplete citation. Much of the data reported could be traced to the 1970 census.

Form B was used for reporting indicator statements. After the agency documents were screened and indicator statements written, the forms were examined to eliminate duplications, incompleteness, or inaccuracies.

[5] Forms A and B are found in Appendixes 2 and 3.

Step 9: Using other Indicator Studies

A number of studies of indicator use in the general field of human services have developed over the last several years.[6] The department's Resource Dissemination Center[7] was asked to search for materials pertaining to indicators.

The retrieval process relied first upon a manual search. This involved the use of various educationally oriented indexes: *Research in Education, Current Index to Journals in Education,* and *Education Index.* These indexes are scanned by using selected terms from the *Thesaurus of ERIC Descriptors* (e.g., educational benefits, educational accountability, school responsibility; unfortunately no descriptor was similar to "performance indicators"). Material listed in these indexes was obtained from the center or through inter-library loan. The center card catalog also was checked for pertinent material.

The manual search was extended to include a check of the *U.S. Government Printing Office Monthly Catalog* for Office of Education and Bureau of Census publications.

The last step was a computer search of ERIC. This process involved selections of computer logic and then a computer tape run at OTIS (Oregon Total Information System) located in Eugene. The results of both searches are listed in Appendix 4.

Some materials, such as *Toward a Social Report,* produced suggestions for indicator data. Other studies, such as *The Quality of Life* and *Indicators of Educational Outcome,* contained lists of data that were checked for duplication of agency material already obtained and then used to guide a search for similar data collected in Oregon. Although *Indicators of Educational Outcome* includes some indicators that do *not* meet the department's criteria (e.g., one-of-a-kind surveys), it did lead to further probing for data that had not been discovered in the agency survey.

Constraints

Time has been the prime constraint in this search. Most of the interviewing of other agencies was achieved in less than two months, although the search for data within the department went on for a longer period of time. Even with the feasibility study, much of this work was trial and error. While time constraints limit this report, they do not apply to continued development of indicator usage in Oregon. The collection of useful data from a number of sources has been initiated. Now the search can be directed toward obtaining greater depth of information. Also, the search can be expanded to include data collected by private and nonprofit agencies.

This search has concentrated on data collected statewide. However, the experience gained in this project should prove helpful to educational planners at the local level who want to collect and use local data in decision making.

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[6] Bibliographical information on these studies is provided under Selected References in Appendix 5.

[7] Funded as a pilot project in 1970 by the National Center for Educational Communication, the center is concerned with retrieval of validated information from multiple sources.

Chapter V

USE OF INDICATORS IN OTHER SETTINGS

The major purpose of this report is to present one method of using indicators in an assessment system. However, there are many other ways to develop and use indicators as tools in assessment. Following is a summary of six concepts developed by other agencies.

Pennsylvania

Much of the thinking in Oregon has been influenced by Pennsylvania where one of the more advanced educational assessment programs in the country is under way. Pennsylvania does not use the term "indicator," but a discussion of Pennsylvania's work may clarify the indicator concept proposed in Oregon.

Pennsylvania educators focus on "conditions" or "variables" that can be used to predict student performance. They have identified more than 50 potential variables classified in three categories: characteristics of students, characteristics of teachers, and school and community characteristics. The purpose is to find the exact relevance of each of these conditions to student performance in relation to each of ten goals. For example, they have found five conditions that predict performance of fifth-grade students in relation to one goal, "achieving self-understanding": father's occupation, housing conditions in the community, teacher stability, teacher experience, and school subsidy per student.

These conditions, or variables, predicting student performance are comparable to Oregon's *input* and *context* classifications.

The Pennsylvania assessment program is concerned with relating patterns of student performance (as measured by tests) to conditions that affect such performance. Results of these tests are comparable to Oregon's proposed *performance* indicators.

The difference between Pennsylvania's "conditions" and "variables" and Oregon's *input, context,* and *performance indicators* is primarily in their use. But Oregon proposes a third type of indicator derived from a class of conditions or variables that may not be given as much attention in Pennsylvania *societal* indicators.

New York

New York has developed a Performance Indicators in Education (PIE) program for school district use in evaluation. The PIE model proposes four types of indicators: *input factors*, (student characteristics at the start of the evaluation), *process factors* (program characteristics), *output factors* (student characteristics at the conclusion of the evaluation), and *surrounding conditions* (community characteristics).

The intention of the PIE program is "to estimate the difference between (a) the level of output which could be expected if the schools' contribution to output were not significant, and (b) the actual level of the schools' output. The difference between the two values is taken as an indicator of the schools' performance."[8]

Among the variables used to develop a profile of each district are individual student achievement scores; gain scores indicating student achievement in arithmetic from first to third grades; student enrollment data; property value per pupil; square miles per pupil; proportion of Negro and Spanish surnamed Americans among students and staff; expenditures for principals, supervisory staff, and other instructional staff; instructional expenditures; and central administration expenditures. These variables fall primarily into Oregon's proposed *input, context,* and *performance* indicator classification.

Utah

Utah's appraisal of its education program is based on data that is almost exclusively related to students. Utah does go beyond academic achievement, however, and looks at a range of variables relating to behaviors and attitudes rated by teachers and the students themselves. They fall into the domain of Oregon's *input* and *performance* indicators.

Two sources of data related to student achievement used by Utah--American College Boards and Armed Forces Qualifying Test scores--would be considered *societal* indicators by Oregon's planners.

Institute of Administrative Research

The Institute of Administrative Research, Teachers College, Columbia University, conducted a study to identify variations in a quantified quality criterion that could be related to a number of internal classroom variables. The study was designed specifically to assess a school's classroom processes on four criteria: individualization, interpersonal regard, group activity, and creativity.[9]

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[8] State Education Department, The University of the State of New York, *New York State Performance Indicators in Education, 1972 Report*, The University, Albany, 1972.

[9] "Indicators of Quality," *IAR Research Bulletin*, Vol. 14, No. 2, May 1967.

The 11 internal classroom variables used in the study were: subject taught; type of classroom teacher; style of educational activity; grade level; number of adults in the classroom, class size; sex of the teacher; day of the week; half of the period; time of the day; and number of nonwhite students in the classroom. The relationship of some of the above variables to Oregon's *input* and *context* indicators is readily seen.

Midwest Research Institute

The Midwest Research Institute recently published a second update of a study done in 1968 titled, *Quality of Life in the United States.*[10] The first update was subtitled, *An Excursion into the New Frontier of Socio-Economic Indicators.*[11]

The preface of the May, 1973, publication states, "The generally accepted national economic health indicator, Gross National Product, often has served as a basis for establishing goals and measuring achievement of the goals at the policy-making level. But growing attention to the social, economic, political and environmental health of the nation has led to the quest for other indicators which will more adequately reflect the overall 'health' of the nation and its citizens' well being."

"Quality of life" has been defined as having nine sub-classifications. Education is one of them. Ten indicators are used to define quality under education: percent of males 16 to 21 years old who are not high school graduates; percent of persons 25 years old and over who completed median school years education; ratio of total public elementary and secondary enrollment to population 5 to 17 years old; ratio of public school average daily attendance to enrollment; ratio of higher education enrollment to total population 18 to 24 years old; percent of population 3 to 34 years old enrolled; percent of Selective Service draftees who failed mental tests; ratio of high school graduates to first-time college students; ratio of cost-adjusted public school expenditures to personal income per capita; and public school pupil-teacher ratio. These correspond to Oregon's *performance* and *societal* indicators.

It is interesting to note that only one indicator, percentage of draftees passing (or failing) pre-induction exam, has appeared in all three of the Quality of Life reports.

National Center for Educational Statistics

Two recent publications from NCES have used the term "indicators" and should be examined by those interested in the concept.

Indicators of Educational Outcome, Fall 1972[12] is an effort to break out of the mode of using inputs as measures of schooling's success. Fifty-eight different educational outcomes have been identified and organized in a series of three phases; primary effects, secondary effects, and tertiary or intergenerational effects.

A summary classification of the outputs and examples follows.

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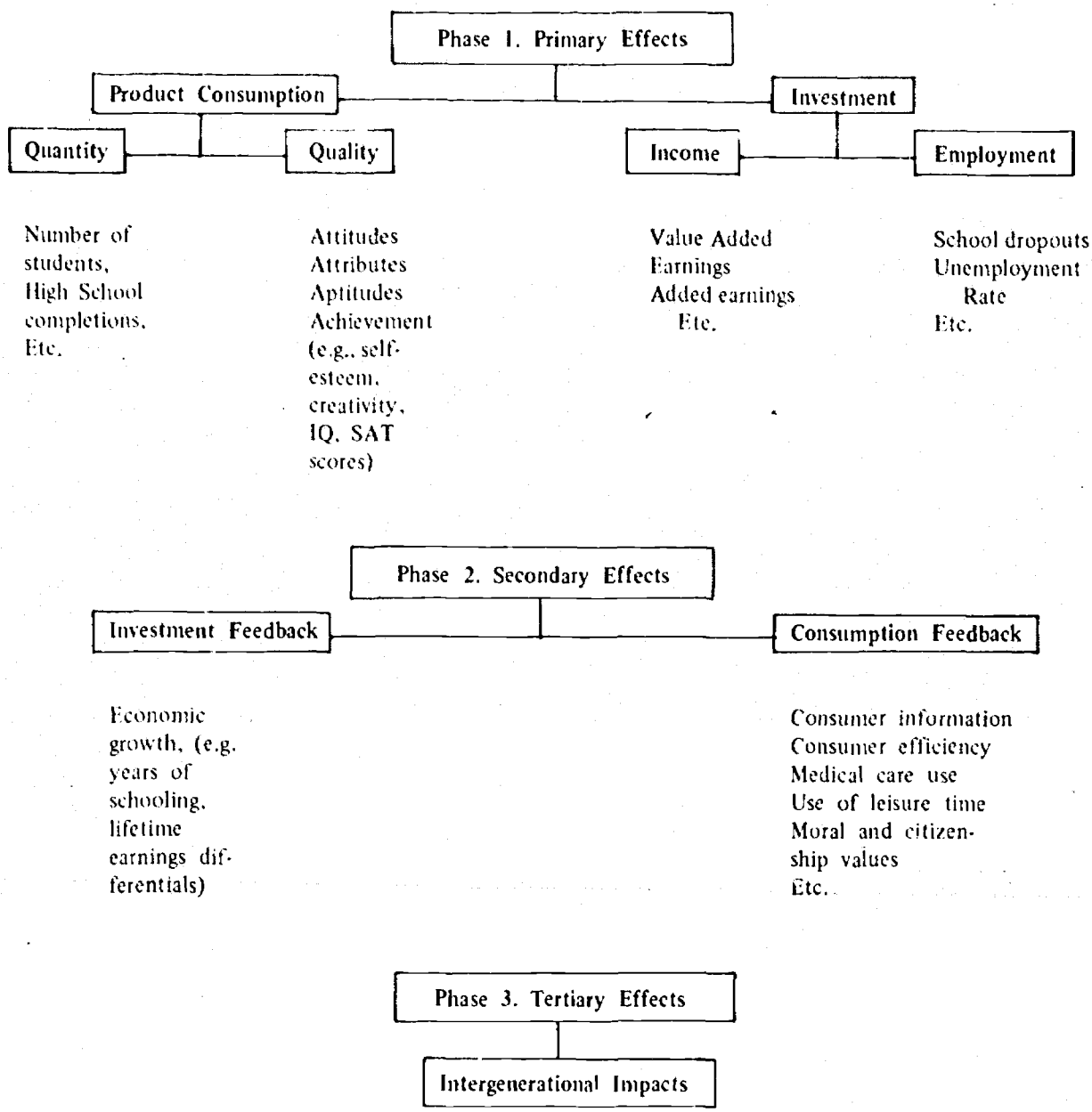
[10]Midwest Research Institute, *Quality of Life in the United States, 1970,* the Institute, Kansas City, 1973. (425 Volker Blvd., Kansas City, Missouri 64110)

[11]Midwest Research Institute, *Quality of Life in the United States, 1970,* "An Excursion into the New Frontier of Socio-Economic Indicators," the Institute, Kansas City, 1973.

[12]U.S. Department of Health, Education and Welfare, *Indicators of Educational Outcome, Fall 1972,* Government Printing Office, Washington, D.C., 1973.

Figure 1: Summary Classification of Outputs and Examples



An examination of the 58 outcome indicators reveals that some of them would fall into Oregon's *context, performance,* or *societal* classifications.

National Assessment and Social Indicators, January 1973,[13] is one of a series of exploratory efforts to examine and report on educational outcome measurements. Among the ideas presented is the possible use of National Assessment as an educational product index (EPI) that would be applied in the same way as the Consumer Price Index (CPI)--an index of change over time.

The use of National Assessment exercises as a step in developing useful social indicators is an interesting subject for further research.

[13]U.S. Department of Health, Education and Welfare, *National Assessment and Social Indicators, January 1973.* Government Printing Office, Washington, D.C., 1973.

APPENDIX 1

SOURCES OF DATA FOR INDICATORS

INDICATORS	NATURE OF DATA
Department of Education	
Management Information Services, Field Services Division	
Number of students in Oregon schools by race or ethnic background (Spanish surname, Black, American Indian, Oriental, Russian, Anglo).	By county, grades 10, 11, and 12, by total grades, by school districts; reported as comparative information from other sources; reported weekly in *Racial and Ethnic Survey*.
Number of segregated schools.	By school and school district; reported annually in *Racial and Ethnic Survey*.
Number of racial and ethnic group school district personnel.	By county; reported annually in *Racial and Ethnic Survey*.
Number of students completing preparation for teaching certificate, 1958-71: elementary, secondary subject, and elementary specialty.	By state; reported annually in *Oregon Teacher Supply and Demand*.
Number of schools with high concentration of low-income students.	By county; reported annually in *Basic Statistical Data*.
Number of school district certificated and noncertificated personnel: position and level (kindergarten, elementary, junior high, senior high).	By county; reported annually in *Basic Statistical Data*.
Estimated total county population, age 4-20.	By county, reported annually in *Basic Statistical Data*.
Number of school dropouts: percentage per year, age and sex 1963-70, grade and sex 1963-70, reason by sex 1963-70.	By state; reported annually in *Basic Statistical Data*.
Average school district budgets, 1967-72: budget item in administration, instruction, health services, etc.	By state; reported annually in *Basic Statistical Data*.
Operating costs by budget category, grades 1-12, 1970-71, including per pupil costs.	By county and Intermediate Education District (IED); reported annually in *Basic Statistical Data*.
Private and parochial school enrollment: grade levels, average daily membership (ADM), teacher full time equivalent (FTE), high school graduates.	By county; reported annually in *Basic Statistical Data*.
Projected enrollment by grade (elementary and secondary) for school years 1971-72 through 1976-77.	By state; reported annually in *Basic Statistical Data*.
Average daily membership: grade levels.	By county and school district; reported annually in *Basic Statistical Data*.
Operating costs per resident average daily membership (elementary and secondary).	By type and size of school district; reported annually in *Basic Statistical Data*.
Number of students: elementary and secondary, grade level.	By county and school district; reported annually in *Basic Statistical Data*.
Projected average daily membership by grade for 1971-77.	By state; reported annually in *Basic Statistical Data*.
Number of public high school graduates by sex.	By county, school district and school; reported annually in *Basic Statistical Data*.

INDICATORS	NATURE OF DATA
Department of Education Management Information Services, Field Services Division	
Votes cast in all school budget elections, with budget information.	By county and school district; reported annually in *Basic Stistical Data.*
Number of public and private high school graduates, actual and projected for 1963-77.	By county and state; reported annually in *Basic Statistical Data.*
Number of certificated personnel leaving positions: reasons for leaving.	By state reported annually in *Basic Statistical Data.*
Number of teachers per 100 students.	By school district; reported annually in *Basic Statistical Data.*
Number of recipients for free and reduced school lunch	By school district; reported annually in *Basic Statistical Data.*
Community college student enrollment: FTE total 1961-72; by instructional program, 1964-72.	By community college and state; reported annually in *Basic Statistical Data.*
Community college enrollment in vocational courses (155 subjects) 1969-72.	By community college; reported annually in *Basic Statistical Data.*
Community college enrollment: lower division, vocational education, other.	By community college; reported annually in *Basic Statistical Data.*
Number of school bus accidents: type, date, and time.	By county and state; reported annually in *Basic Statistical Data.*
Number of school district certificated personnel: sex age, and citzenship.	By school district and state; reported annually in *Basic Statistical Data.*
Number of school district certificated personnel: years of teaching experience, subjects taught, hours of college credit, degrees earned.	By school district and state; reported annually in *Basic Statistical Data.*
Number of teacher aides: average hourly salary, sex, age, grade level, type of assignment.	By county; reported annually in *Basic Statistical Data.*
Number of counselors: percentage of assigned counseling time.	By state; reported annually in *Basic Statistical Data.*
Number of school districts with programs for five-year-olds.	By school district; reported annually in *Basic Statistical Data.*
Number of five-year-olds in school programs (excluding private kindergartens) by funding source.	By school district; reported annually in *Basic Statistical Data.*
Number of children in public kindergartens.	By county and school district; reported annually in *Basic Statistical Data.*
Number of special classes for emotionally disturbed: number of districts, number of classes, number of teachers, number of students, average and per capita costs.	By state; reported annually in *Basic Statistical Data.*

INDICATORS	NATURE OF DATA

Department of Education
Management Information Services, Field Services Division

Estimated enrollment in junior high school courses: Science General Science Advanced General Science Environmental Science Intermediate Science Curriculum Study Level 3 (Probing the Natural World) Biology (traditional) Special (low level) Biology BSCS Biology, Green BSCS Biology, Yellow BSCS Biology, Blue IIS (Ideas & Inv. in Sci.: Bio.) IMB (Int. of Man & Biosphere) Phys. Science (traditional) Intermediate Science Curriculum Study Level 1 (Probing the Natural World) IPS (Intro. Phys. Science) Time, Space and Matter IIS (Ideas & Inv. in Sci.: Phys.) IME (Int. of Matter & Energy) Photography Intermediate Science Curriculum Study Level 2 (Probing the Natural World) Applied Science Earth Science ESCP (Invest. the Earth) Marine Sci. or Oceanography Meterology IET (Int. of Earth & Time) Aerospace Integrated Science Sci. Seminar or Research Mini-courses Foreign Languages French German Latin Russian Spanish Health and Physical Education Health Education Physical Education Language Arts Language Arts Grade 7 Language Arts Grade 8 Language Arts Grade 9 Journalism Speech Speech and Journalism Drama Developmental Reading Remedial Reading Mini-courses	By school district; reported annually in *Basic Statistical Data.*

INDICATORS	NATURE OF DATA
Department of Education Management Information Services, Field Services Division	
Social Studies Social Studies Grade 7 Social Studies Grade 8 Social Studies Grade 9 World Cultures Mini-courses Mathematics A (Arithmetic--Remedial) M1 (Gr. 7 Mathematics) M2 (Gr. 8 Mathematics) M3 (Algebra 1) M4 (Geometry) GM (General Mathematics) M1-2 (Gr. 7 Adv. Track Pre-Alg.) Algebra 1 Mini-courses	
Estimated enrollment in senior high school courses:	By school district, reported annually in *Basic Statistical Data.*
Mathematics Arithmetic General Mathematics Advanced General Math Basic Mathematics Algebra 1 Alg. 1 (2-yr. seq., 1st year) Alg. 1 (2-yr. seq., 2nd year) Algebra 2 Algebra 2 with Trig. Plane Geometry Solid Geometry Plane & Solid Geometry Analytical Geometry Trigonometry Calculus (Adv. Placement) Multi-topic Adv. Math Probability and/or Statistics Applied or Tech. Math Consumer Math Computer Science Computer Programming Mini-courses Science General Science Advanced General Science Environmental Science Intermediate Science Curriculum Study Level 3 (Probing the Natural World) Biology (traditional) Special (low level) Biology BSCS Biology, Green BSCS Biology, Yellow BSCS Biology, Blue 2nd Year Biology	

INDICATORS	NATURE OF DATA
Department of Education Management Information Services, Field Services Division	
Advanced Placement Biology IIS (Ideas & Inv. in Sci.: Biol.) IMB (Int. of Man & Biosphere) Physiology Microbiology Zoology Botany Anthropology Physical Science (traditional) Intermediate Science Curriculum Study Level I (Probing the Natural World) IPS (Intro. Phys. Sci.) PSII (Phys. Sci.) Time, Space, and Matter 2nd Year Phys. Science IIS (Ideas & Inv. in Sci.: Phys.) Practical Arts Driver Education classroom, 30 hrs. classroom, 45+ hrs. in-car, 6 hrs. in-car, 7+ hrs. simulator, hrs. Physical Education Health Education Occupational Related Materials & Processes Electricity/Electronics Graphic Communications Mechanical Power Business Education Introductory Typing Home Economics Consumer Education (Personal Finance) Occupational Exploration Agriculture Health Occupational Cruise S.U.T.O.E. Occupational Preparation Agriculture Office Education Child Care Services Drafting Occupations Graphic Arts Occupations Construction Occupations Electricity Electronics Food Services Forest Products Health Occupations Industrial Mechanics Language Arts English I English II English III	

INDICATORS	NATURE OF DATA
Department of Education **Management Information Services, Field Services Division**	
English IV Applied Eng.: Voc. English Applied Eng.: Cluster Program Applied Eng.: Film Study Applied Eng.: Radio and TV Applied Eng.: Publications Adv. Placement English Humanities Journalism I Journalism II Speech I Speech II Speech III Dramatics I Dramatics II Developmental Reading Remedial Reading Library Science Language Study Mini-courses Social Studies U.S. History & Govt. U.S. History, Govt., & Mod. Prob. I U.S. History, Govt., & Mod. Prob. II World History World Cultures I World Cultures II Modern Problems The World Today (Geog.) International Relations Economics Sociology Political Science Psychology Intergroup Human Relations Mini-courses	
Secretary of State **Elections Division**	
Number of voters registered.	By county and school district; collected monthly; unpublished.
Percentage of eligible registered voters.	By state; reported annually in *Official Abstract of Votes.*
Number voting in an election	By state; reported annually in *Official Abstract of Votes.*
Number of eligible voters.	By state; reported annually in *Official Abstract of Votes.*
Number of votes on pollution control bonds.	By county; reported annually in *Official Abstract of Votes.*

INDICATORS	NATURE OF DATA
Teacher Standards and Practices Commission	
Number of school district certificated personnel graduating from state institutions.	By school district; collected annually; unpublished.
Number of teachers employed in state and out of state one year after graduation from state teacher training institution, by subject.	By state; collected annually; unpublished.
Number of certificated education employees: year of certification, type of certification.	By state; collected annually; unpublished.
Executive Department Law Enforcement Council	
Number of arrests: offense, age (under 18, 18 and over).	By county; reported annually in *Uniform Crime Reporting.*
Crimes reported 1966-71: violent, property.	By state; reported annually in *Oregon's Priorities for Criminal Justice: 1973 Comprehensive Plan.*
Rank of state administrative districts based on the total crime index rate (seven major crimes).	By administrative district; reported as comparative information from other sources; reported annually in *Oregon's Priorities for Criminal Justice: 1973 Comprehensive Plan.*
Demographic profiles of the six counties with over 75 percent of crime: Multnomah, Lane, Clackamas, Washington, Polk, Marion; age-crime relationships.	By county; reported annually in *Oregon's Priorities for Criminal Justice: 1973 Comprehensive Plan.*
Executive Department Personnel Division	
Number of state employees: Oregon high school attended, highest grade of education achieved, employing agency, job classification, salary range.	By state agency; report on file.
Educational Coordinating Council	
Percentage of high school graduates who continue in vocational-technical programs versus academic programs.	By school district; collected annually; unpublished.
Percentage of high school graduates who followed plans made during their senior year in school.	By school district; collected annually; unpublished.
Percentage of high school graduates continuing their education at the post-secondary level.	By school district; collected annually; unpublished.
Percentage of high school graduates who continued their education in Oregon institutions.	By school district; collected annually; unpublished.

INDICATORS	NATURE OF DATA
Department of Environmental Quality	
Percentage of contaminants.	By county; reported annually in *Report on Air Quality Control Program.*
Percentage of oxygen and amounts of pollutants, by water sources.	By water system; reported monthly in *Water Quality in Oregon.*
Oregon State System of Higher Education Bureau of Business and Economic Research	
Assessed valuation of property, 1963, 1967, 1970, 1971, 1972.	By county; reported as comparative information from other sources; reported annually in *Oregon Economic Statistics* from Department of Revenue "Summary of Assessment Rolls."
Expenditures of local government (including local schools).	By county; reported as comparative information from other sources; reported every ten years in *Oregon Economic Statistics* from Census "Government Finance GF71 II 5."
Number of full-time equivalent employees of education.	By county; reported as comparative information from other sources; reported evern ten years in *Oregon Economic Statistics* from Census "Compendium of Public Employment."
Amount of personal income: tax, average income, average tax.	By county; reported as comparative information from other sources; reported biennially in *Oregon Economic-Statistics,* Department of Revenue, *Second Biennial Report 1970-72.*
Population: sex, age (under 6, 6-17, 18-44, 45-64, 65+).	By county; reported as comparative information from other sources; reported every ten years in *Oregon Economic Statistics.*
Amount of property tax levied for school districts: joint elementary and unified, union high, county unit, community college.	By county; reported as comparative information from other sources; reported annually in *Oregon Economic Statistics* from Department of Revenue "Summary of Assessment and Tax Roles."
Number of children in families below the poverty level.	By county and cities over 2,500; reported every ten years in *Income and Poverty Data, Cities and Counties of Oregon.*
Population 1960-72.	By county; reported as comparative information from other sources; reported every ten years in *Oregon Economic Statistics* from Center for Population Research and Census.
Number of people living in urban or rural conditions.	By county; reported as comparative information from other sources; reported every ten years in *Oregon Economic Statistics.*

INDICATORS	NATURE OF DATA
Number of people by land area, density 1960-70-72.	By county; reported as comparative information from other sources; reported every ten years in *Oregon Economic Statistics.*
Number of business failures, 1950-72.	By Portland and state; reported as comparative information from other sources; reported monthly in *Oregon Economic Statistics* from Dun & Bradstreet, Inc.
Statistics of farms: land area, number of farms, acres in farms, average size, cropland, woodland, amount of irrigated land.	By county; reported annually in *Oregon Economic Statistics* from Department of Commerce "Census of Agriculture County Data."
Number of dollars in payrolls, by industry 1963-71.	By county; reported as comparative information from other sources; reported annually in *Oregon Economic Statistics.*
Department of Human Resources, Children's Services Division	
General population profile: number of native-born residents by median school years, nonworkers, women working, men over 65 still working, median income per family, families below poverty level.	By state; reported every ten years in *Vital Statistics.*
Total number of children served by Public and Voluntary Child Welfare agencies and institutions.	By state; collected semi-annually; unpublished.
Number of juvenile delinquency commitments to state institutions.	By county; collected annually; unpublished.
Department of Human Resources, Welfare Division	
Number of persons participating in abundant food and food stamp programs.	By county; reported annually in *Public Welfare in Oregon,* Volume 36, Number 12.
Number of persons receiving general assistance aid payments (nonmedical).	By county; reported annually in *Public Welfare in Oregon,* Volume 36, Number 12.
Number of persons receiving aid to dependent children (ADC) payments (nonmedical).	By county; reported annually in *Public Welfare in Oregon,* Volume 36, Number 12.
Department of Human Resources Economic Opportunity Office, Special Programs Division	
Number of juvenile, school case, misdemeanor problems handled.	By community action agency; reported quarterly in *Community Service Program Progress Report.*
Number of consumer problems handled by Legal Aid: sales contracts, garnishments, wage claims, bankruptcies, other.	By community action, service agency, location; reported quarterly in *Community Service Program Progress Report.*
Number of family problems handled by Legal Aid: divorce and annulment, separation, nonsupport, custody and guardianship, paternity, adoption, other.	By community action agency; reported quarterly in *Community Service Program Progress Report.*

INDICATORS	NATURE OF DATA
Department of Human Resources, Mental Health Division	
Total number of admissions including first and readmissions, to community mental health clinics.	By county; reported annually in *Community Mental Health Clinics.*
Department of Human Resources, Employment Division	
Estimated peak number of migrants found on the 15th of the month during the harvest season.	By county; collected annually; unpublished.
Department of Human Resources, Health Division	
Rates of venereal disease, 1940-71.	By state; reported annually in *Vital Statistics.*
Number of cases of venereal disease, 1971.	By county; reported annually in *Vital Statistics.*
Number of infant deaths.	By county and state; reported annually in *Vital Statistics.*
Number of neonatal deaths.	By county and state; reported annually in *Vital Statistics.*
Number of immature births.	By county and state; reported annually in *Vital Statistics.*
Number of illegitimate births.	By county and state; reported annually in *Vital Statistics.*
Number of divorces.	By county and state; reported annually in *Vital Statistics.*
Number of marriages.	By county and state; reported annually in *Vital Statistics.*
Percentage of ambulance personnel with emergency training.	By county; collected annually; unpublished.
Number of births, 1930-71.	By county and state; reported annually in *Vital Statistics.*
Number of live births.	By county and state; reported annually in *Vital Statistics.*
Number of deaths due to five principal causes with percentage of population by age groups (under 1 year, 1-4, 4-14, 15-24).	By county and state; reported annually in *Vital Statistics.*
Number of accidental deaths: four leading sources, age groups (4 years and under, 5-14, 15-24).	By state; reported annually in *Vital Statistics.*

INDICATORS	NATURE OF DATA
Department of Human Resources, Health Division	
Number of deaths: five principal causes, percentage of population by age groups (under 1 year, 1-4, 5-14, 15-24).	By county and state; reported annually in *Vital Statistics.*
County health profile: births, deaths, abortions, marriages, divorces, TB, VD, flu, measles, and others, with rates.	By county and administrative district; reported annually in *Vital Statistics.*
Proportion of live births: birth order of infant, 1950-71.	By state; reported annually in *Vital Statistics.*
Number of maternal deaths and ratio per 100,000 live births.	By county and state; reported annually in *Vital Statistics.*
Number of therapeutic abortions and ratio per 1,000 live births.	By county and state; reported annually in *Vital Statistics.*
Department of Human Resources Comprehensive Health Planning Office, Health Division	
Administrative district (14) profiles: population, percentage of state population, minority group population and percentage, urban and rural population numbers and percentage with mortality rate, accident mortality rate, infant mortality rate.	By administrative district; reported as comparative information from other sources; reported annually in *Comprehensive Facilities Services Plan, District Profiles.*
Administrative district profiles: population, percentage of state population, density, minority, urban and rural median family income, mortality rates, health manpower.	By county and administrative district; reported as comparative information from other sources; reported annually in *Comprehensive Facilities Services Plan, District Profiles.*
Family income (average).	By county; reported every ten years in *Comprehensive Emergency Medical Service Plan* (1970 Census figures).
Demographic profile: population—male, female, median age, densities, accident, injury, death rate, number of medical personnel.	By county; reported as comparative information from other sources; reported annually in *Comprehensive Emergency Medical Services Plan.*
Number of health professionals needed in Oregon communities, by profession.	By county; reported annually in *Scarcity of Health Professionals.*
Department of Human Resources State Program on Aging, Special Programs Division	
Number of people in various health occupations.	By county; reported in *Comprehensive Facilities Services Plan, District Profiles.*
Number of general socioeconomic factors, service needs, and services for the elderly (65+).	By state administrative district; reported as comparative information from other sources; reported annually in *The Elderly Oregonian Today.*
Number of elderly (65+) and total population (1960-70).	By administrative district; reported as comparative information from other sources; reported every ten years in *The Elderly Oregonian Today.*

INDICATORS	NATURE OF DATA
Department of Human Resources State Program on Aging, Special Programs Division	
Number of persons paid and total amounts paid by employer pension programs.	By state; reported as comparative information from other sources; reported annually in *The Elderly Oregonian Today.*
Department of Human Resources Governor's Manpower Plan Council, Special Program Division	
Population 16-21: not in school, unemployed, and not in labor force.	By administrative district; collected annually; unpublished.
Number of welfare recipients.	By administrative district; collected annually; unpublished.
Number of unemployed and underutilized disadvantaged persons averaged over 12 months.	By administrative district; collected annually; unpublished.
Total number of men 16-24 with less than three years of college completed.	By administrative district; collected annually; unpublished.
Bureau of Labor, Apprenticeship and Training Division	
Number of apprentices being cancelled from the apprenticeship program.	By special service district; reported monthly in *Bureau Labor, New Registration Report and Exit Action.*
Number of apprentices completing the apprenticeship program.	By special service district; reported monthly in *Bureau of Labor, New Registration Report and Exit Action.*
Number of apprentices belonging to a minority ethnic group.	By special service unit; collected semi-annually; unpublished.
Bureau of Labor, Wage and Hour Division	
Number of work permits issued to minors.	By state; reported monthly in *Bureau of Labor Work, Analysis Report.*
Oregon State Library	
Number of registered library borrowers.	By city; reported annually in *Directory of Oregon Libraries.*
Liquor Control Commission	
Total number of arrests executed for intoxicated drivers.	By state; collected annually; unpublished.

INDICATORS	NATURE OF DATA
Department of Revenue	
Number of elderly persons with no taxable income or less than $3,000 of taxable income.	By address; reported annually in *Oregon Department of Revenue*
Secretary of State	
Housing information: total value of housing, rural housing value, owned housing value, rented housing value, six value groups, six rental prices, number of vacancies for sale or for rent.	By county census unit and county; reported every ten years in *Oregon Enumeration District Summary, Volume B.*
Percentage of population: male, female, age 1-20, 18-20, 21-34, 35-44, 45-64, 64+, white, Negro, Indian, other.	By county census unit and county; reported every ten years in *Oregon Enumeration District Summary, Volume B.*
Percentage of population: urban-rural, central cities, suburbs of 25,000+, 2,500 to 24,999, 1 to 2,499.	By county census unit and county; reported every ten years in *Oregon Enumeration District Summary, Volume B.*
National Consumer Finance Association	
Consumer price index compared to average personal income.	By state; reported as comparative information from other sources; collected monthly; unpublished.
U.S. Department of Commerce, Bureau of Census	
Percentage of adults (age 25 years and older) with an eighth grade education or less.	By state; reported every ten years in *General Social and Economic Characteristics, Oregon 1970 PC(1)C39.*
Number of adults without high school education (age 25 years and older).	By county census unit; reported every ten years in *General Social and Economic Characteristics, Oregon 1970 PC(1) C39.*
Number of persons below poverty income level in 1969 using public assistance.	By county census unit; reported every ten years in *General Social and Economic Characteristics, Oregon 1970 PC(1)C39.*
Total number of persons below poverty level.	By county census unit; reported every ten years in *General Social and Economic Characteristics, Oregon 1970 PC(1)C39.*
Number of adults (age 25 and older) with 0-4 years of education.	By county census unit; reported every ten years in *General Social and Economic Characteristics, Oregon 1970 PC(1)C39.*

INDICATORS	NATURE OF DATA
Department of Transportation, Oregon Traffic Safety Commission	
Number of drivers involved in accidents age 19 and under, 20-24.	By selected cities; reported annually in *Highway Safety Program Analysis.*
Number of schools with organized safety education programs, driver education, student accident reporting, transportation safety programs.	By selected cities; reported annually in *Highway Safety Program Analysis*
Number of schools with adult driver education including problem driver courses, refresher courses, and special driver courses for handicapped.	By selected cities; reported annually in *Highway Safety Program Analysis.*
Number of schools with programs related to alcohol involvement in traffic accidents.	By selected cities; reported annually in *Highway Safety Program Analysis.*
Number of traffic violation convictions for ages 15, 16, 17, 18-19, 20-24.	By state; reported annually in *Comprehensive Plan.*
Percentage of licensed drivers under 25 and 25-34 years of age with percentage involved in all accidents and percentage in fatal accidents.	By state; reported annually in *Comprehensive Plan.*
Number of vehicle deaths per 100,000 miles driven.	By state; reported annually in *Comprehensive Plan.*
National Science Board	
Number of ph.d's in science and technology by geographic location of high school attended.	By state; reported every ten years in *Science Indicators.*
Department of Health, Education, and Welfare	
Number of registered pharmacists: age, sex, education, type, and ratio per 10,000 population.	By state and U.S.A.; reported as comparative information from other sources; reported annually in *Health Manpower US 1965-67,* Tables 12, 13, 14, 15, 16.
Number of registered nurses and ratio per 10,000 population.	By state and U.S.A.; reported as comparative information from other sources; reported annually in *Health Manpower US 1965-67.*
Number of physicians (MD & DO) providing patient care and ratio per 10,000 population.	By county, state, and U.S.A.; reported as comparative information from other sources; reported annually in *Health Manpower US 1965-67.*
Number of dentists and ratio of dentists per 10,000 population.	By state and U.S.A.; reported as comparative information from other sources; reported annually in *Health Manpower US 1965-67.*

INDICATORS	NATURE OF DATA
Department of Transportation, Motor Vehicles Division	
Percentage of male drivers and percentage of female drivers by number of accidents and number of violations.	By state; reported annually in *Oregon's Driving Population.*
Number of driving accidents and arrests by age (and mailing address with special computer run).	By mailing address; reported annually in *Accident and Violation Data for Licensed Drivers.*

APPENDIX 2

(FORM A)

Date _____

DATA COLLECTION FORM

Agency name _____

Title of agency publication or report _____

_____

For internal use only? _____ For use of other agencies? _____

For general public? _____ Other? _____

Data collected and reported how often? _____

Data collected and reported on what anniversary dates? _____

_____

For how many years are past reports available? _____

Will data continue to be routinely collected and reported? _____

_____

Data is collected on what geographic or population basis (i.e., state, county, county census unit, special service district, special target population)? _____

_____

Is the data required by a federal agency or do we have other assurances that most states collect similar data? _____

Data reported is:

1. Numbers _____
2. Percentages _____
3. Ratios _____
4. Averages _____
5. Other _____

Describe useful data collected by the agency but not reported in a manner most useful to us. _____

_____

_____

_____

_____

_____

_____

_____

How can this data be secured?

If cost is involved, how much?

APPENDIX 3

(FORM B)

CARD CODE FORM

Source

Department Division

Type

1. Input
2. Performance
3. Societal

State Dept. of Education Goal

1
2
3
4
5
6

Availability

1. As reported
2. Collected, provided upon request
3. Collected, provided at cost
4. Reported as comparative information from other sources

Indicator:

_____

_____

_____

_____

Publication or report:

_____

_____

Primary source (if any):

_____

_____

Frequency

1. Reported monthly
2. Reported annually
3. Reported biennially
4. Other _____

_____

_____

Demography

1. By county census unit
2. By county
3. By school district
4. State
5. Other _____

Data reported as

1. Number of cases
2. Percentage of population
3. Ratio
4. Average
5. Other _____

APPENDIX 4

SOURCES OF DATA

1. Chamber of Commerce, Portland

2. Commerce, Department of

   2.1 Consumer Services Division
   2.2 Safety Division

3. Consumer Credit Counseling

4. Education, Department of

   4.1 Compensatory Education, Elementary and Secondary Education
   4.2 Management Information Services, Field Services Division
   4.3 Community College Business Services, Community College and Career Education Division.
   4.4 Business Systems and Auxiliary Services, Field Services Division
   4.5 Legal and Accreditation Services, Field Services Division
   4.6 Student Services and Proprietary Schools, Community College and Career Education Division
   4.7 Basic Education, Elementary and Secondary Education
   4.8 Special Education, Elementary and Secondary Education
   4.9 Planning and Program Evaluation, Planning and Evaluation
   4.10 Statewide Assessment, Planning and Evaluation
   4.11 Exemplary Programs, Planning and Evaluation
   4.12 Instructional Technology, Elementary and Secondary Education
   4.13 Legislative-Information Services, Administration
   4.14 Business Office, Administration
   4.15 Personnel Office, Administration
   4.16 Staff Support, Administration
   4.17 School for the Blind, Administration
   4.18 School for the Deaf, Administration
   4.19 Grants-Contracts Review, Administration
   4.20 Career Education and Manpower Training, Community Colleges and Career Education Division
   4.21 College Transfer Adult-Continuing Education Community Colleges and Career Education Division

5. Educational Coordinating Council

6. Environmental Quality, Department of

7. Executive Department

   7.1 Law Enforcement Council
   7.2 Personnel Division
   7.3 Data Systems Division

8. Governor's Office

   8.1 Governor's Commission on Youth
   8.2 Governor's Manpower Planning Council
   8.3 Governor's Economic Development Advisory Committee
   8.4 Public Safety

9. Higher Education, Oregon State System of

   9.1 High School Relations, Office of Academic Affairs
   9.2 Population Research and Census, Portland State University
   9.3 Project on Environmental Quality, Portland State University
   9.4 Bureau of Business and Economic Research
   9.5 Bureau of Governmental Research and Services

10. Human Resources, Department of

    10.1 Children's Services Division
    10.2 Welfare Division
    10.3 Economic Opportunity Office, Special Programs Division
    10.4 Mental Health Division
    10.5 Employment Division
    10.6 Health Division
    10.7 Comprehensive Health Planning Office, Health Division
    10.8 State Program on Aging, Special Programs Division
    10.9 Corrections Division

11. J.C. Penney Company

12. Labor, Bureau of

    12.1 Apprenticeship and Training Division
    12.2 Management Services Division
    12.3 Wage and Hour Division

13. Library, Oregon State

    13.1 Library Services Division

14. Liquor Control Commission

15. Police, Oregon State Department of

16. Revenue, Department of

17. Secretary of State

    17.1 Elections

18. Teacher Standards and Practices Commission

19. Transportation, Department of

    19.1 Traffice Safety Commission, Oregon
    19.2 Motor Vehicles Division

20. U.S. National Bank of Oregon

21. Veterans' Affairs, Department of

22. Other_____

    _____

    _____

    _____

APPENDIX 5

SELECTED REFERENCES FOR MANUAL SEARCH

An Assessment of Educational Needs for Learners in Florida. Bureau of Research, Florida Department of Education, Tallahassee, Florida 32304. 1970. $2.80

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Census of Population: 1970, Detailed Characteristics, Final Report PC (1) D39 Oregon. U.S. Bureau of the Census, U.S. Government Printing Office, Washington, D.C. 20402. 1972. $3.50

Census of the Population: 1970, General Population Characteristics, Final Report PC (1) B39, Oregon. U.S. Bureau of the Census. U.S. Government Printing Office, Washington, D.C. 20402. 1971. $1.00.

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Porsyth, Robert A. *Consideration Related to the Usefulness of the Performance Indicators in Dyer's Student Change Model.* American Educational Research Association. 1972. $.65.

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Performance Indicators in Education: Telephone Survey The State Education Department, Bureau of School Programs Evaluation, Albany, New York 1224. 1973.

Performance Indicators: Workbook. The State Education Department, Bureau of School Programs Evaluation, Albany, New York 12224. 1973.

Preliminary Statistics of State School Systems, 1969-70. Department of Health, Education, and Welfare. Publication (OE-73-11702). U.S. Government Printing Office, Washington, D.C. 20402. 1973. $.40.

Preprimary Enrollment, October 1972. Department of Health, Education, and Welfare. Publication (OE-73-11411). U.S. Government Printing Office, Washington, D.C. 20402. 1973. $.55.

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AA 49536-74

The activity which is the subject of this report was supported in whole or in part by the U.S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.